

Patrick O'Keefe
A MAN WHO BUILT A SET HE HAS
NEVER SEEN

Caddell, Alfred M.

HV1792
0



**M.C. MIGEL LIBRARY
AMERICAN PRINTING
HOUSE FOR THE BLIND**

HU1792

cap. 1

Radio Broadcast, Sun
1923
c. 1

A Man Who Built A Set He Has Never Seen

By ALFRED M. CADDELL

ONE sunshiny day in September, 1899, a police officer patrolling the streets in the Harlem district of New York heard the cry "Help! Help!" coming from a tenement house. Rushing into the darkened hallway, he hurried up the stairs. Suddenly a shot rang out, followed by another shot—and then the whole world became dark to him.

The officer was taken to the Harlem hospital. The best doctors in the city were rushed to his side. One of the bullets had entered his chest; but the other had penetrated his eyes and wrought such havoc that both of them had to be removed, depriving him of his sight forever.

That was almost a quarter century ago and during all the intervening years the likeness of no new object has come into this ex-policeman's life. But since that day he has done some remarkable things, not the least of which has been to construct a radio receiving set totally unassisted by any one except his twelve-year-old boy who read aloud various radio items and plans culled from newspapers and magazines!

Patrick O'Keefe was born in the Harlem district forty-eight years ago. He received his education in the public schools—that is, up to the age of eleven—and then started out to make his own living. Telegraphy sent out a call to him, and soon he became very proficient in the Morse code. He acquired a typewriter and

learned to write via the system of "hunt and peck." But presently telegraphy lost its charm as a vocation for a young man of such powerful physique. He was very active. He must be out of doors, and so on the 24th day of October, 1896, he became a member of New York's guardian police force.

Little could Officer O'Keefe realize, when he plunged into that dark tenement hall to investigate the cause of the disturbance, that those few moments would mark the passing of his sight. And throughout the following twenty-four years, or until the broadcasting wave swept over the land, little did he dream that he would travel to foreign shores and enjoy the scenery—via radio.

The other evening I called upon him in his Harlem home and heard his story. And he told it in a way that only a man who

had actually lived through the privations of the blind could possibly have told it. Not a man given to self-pity and complaint—on the contrary; as thoroughly buoyant in spirits and health as people with the sense of sight, perhaps more so. A man of the world, with a strong grasp of the hand and a strong grasp on the affairs of the world. For as he sat and talked, and laughed and smoked, one could not help seeing that he had a feel on nature's finer things.

"Nature," he said, "has some wonderful compensating laws. When a man's sense of sight is taken away, the remaining senses come

Radio can and should be a permanent and increasing blessing to those who cannot see. It is the one best way in which the blind can lose the sense of remoteness from the lives of other people, and can enjoy the manifold activities which engage a busy world.

No doubt the manual skill and the power of visualization possessed by Mr. O'Keefe are qualities not found in all blind people. But whether they make their own sets or not, they should be introduced to the advantages that radio can bring them. As Mr. O'Keefe says, "Let the blind be thankful that radio is at hand—and also, *let them use it.*"

Those who can afford their own apparatus will find their investments a thousand times repaid; and as for those who cannot, especially those who spend their lives in institutions for the blind, we can only hope that the more fortunate and wealthy will appreciate the unparalleled opportunity they have for doing good.—THE EDITOR.

conditions it would be better to put the filament rheostats in the negative filament leads of the two amplifying tubes shown. In the figure, the rheostats are placed in the positive filament leads of the two tubes, owing to the insertion of the "C," or biasing battery.

Where the battery arrangement shown in figure 7 is used in a radio-frequency amplifier circuit, the circuit will probably be subject to oscillation the moment the grid becomes the least bit negative, so that the C battery shown is hardly necessary.

Logically, it would be ideal to operate the tube with a negative grid potential, but in the case of most radio-frequency amplifiers, the grid must be made slightly positive in order to introduce a loss, which will keep the circuit from oscillating. Any mechanical or electrical system will vibrate if it is once excited, as long as the resistance, or the friction in the circuit, is below a certain value. However, if the resistance is increased, then the system will cease to oscillate. This is evident, for example, in the case of the pendulum of a clock. If the pendulum of a clock is once pulled aside, it will oscillate for some time, even though the clock may not be wound. If the clock is wound, the spring furnishes energy to the pendulum as fast as it is lost to the friction, so that the pendulum continues to oscillate. However, if the pendulum were immersed in some very viscous liquid, then, even

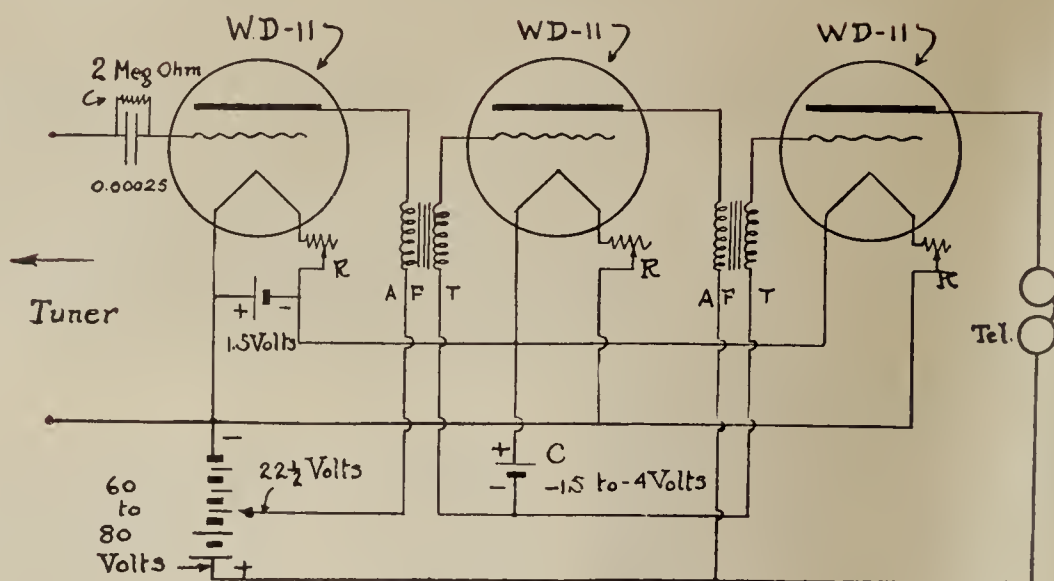


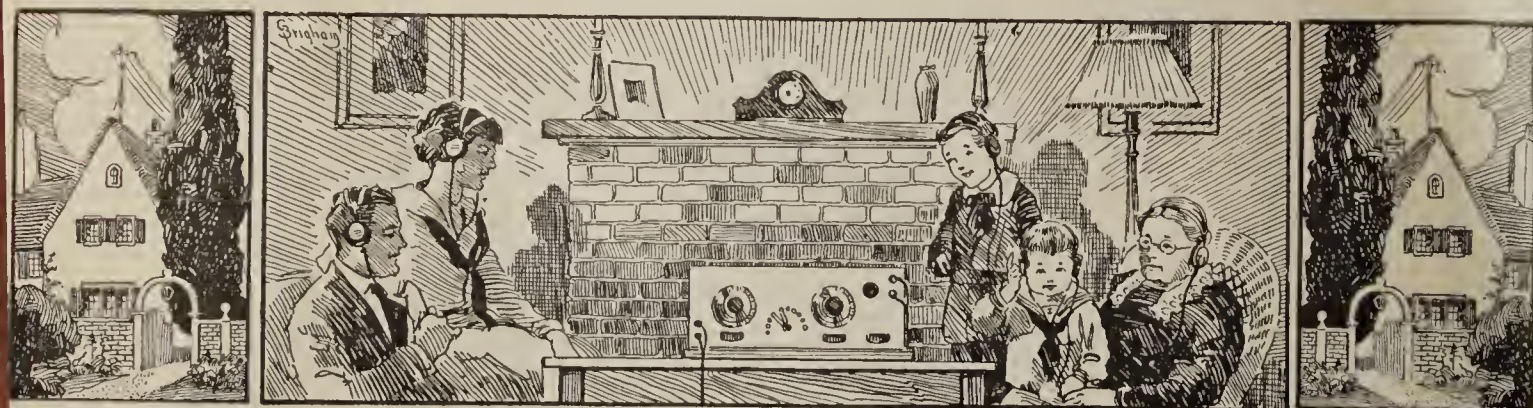
FIG. 8

Three WD-11 tubes are used in this circuit. If the C battery is not employed, it is better to place the filament rheostats for the two amplifier tubes in the negative lead of the A battery, instead of the positive as shown here

though it were given an impulse, it would not oscillate at all.

A C battery in the ordinary radio-frequency circuit is of no use, for the losses just mentioned must be introduced in order to keep the circuit from sliding. In the case of audio-frequency amplification, the results will be very disappointing if the grid is connected to the positive side of the A battery, but very satisfactory if the grid is given a negative bias of the proper amount.

The various arrangements shown illustrate the possible interconnections of the A and B batteries, and from an inspection of them, it should be clear that most circuits, as popularly shown, have been arranged subject to statements made in advanced treatments of vacuum tubes, in which the standard circuit shown in Fig. 1 is used as a standard basis for comparison only.



to the rescue, and become ever so much more acute. And, too, the loss of sight stimulates caution, easiness, patience—never a loss without some gain. Instead of the eye observing a panorama of things, a man's reason becomes better developed, and his nervous energy greatly conserved. Of course, the loss of sight is a great handicap, but I soon became accustomed to it. It wasn't long before I was taking long hikes to Westchester, wrestling with the boys, swimming, fishing, and otherwise enjoying myself in the sunshine and air. Several years after this handicap came upon me, I married, and my wife and children became the joy of my life.

"When did you become interested in radio?" the writer asked.

"Just about a year ago. Contrary to the custom of many blind folks who become more or less clannish and stay by themselves, I have always mingled with people who read the topics of the day. Or sometimes friends drop in with a few cigars and try to tease me. 'What kind of a cigar is this?' they will ask, just to see if I can tell by the aroma. Or else they will drop in to tell me what is going on at the club. On one of these occasions a friend told me about the development of radio, and related some of the wonderful things that could be taken out of the air—concerts, lectures, travel talks, stories, baseball scores, and code. And then my boy read from the newspapers what was going on in that line. I didn't know very much about how the thing worked, but the thought of listening to good music and the possible educational value of the lectures proved entirely too much for me, and I determined to find out something about this thing and to build myself a set.

"In my early days I had studied telegraphy and of course became familiar with batteries,



OPERATING THE SET HE MADE HIMSELF

Mr. O'Keefe, lost his sight twenty-four years ago. "No one knows the amount of good I get out of this little set," he says, "and no one can know but myself, for it is like an emotion—very hard to explain"

circuits and that sort of thing. And I understood a good deal about the telephone. So it came down to the point of cost and actual construction. Naturally, in my circumstances I had to confine myself to a crystal set, and I like the crystal very much. My boy read to me how to make the primary and secondary coils, how to mount the slide tuner, how to connect the crystal, coil, condenser, and phones in the circuit, and gradually I began to visualize in my mind just how the thing could be done.

"Visualization is half the battle. Also I began to comprehend inductance and capacity and to see why different taps had to be taken from the secondaries in order to tune in on different wavelengths. And then came the condenser, detector, phones, and aerial—all this I got firmly in my mind and then proceeded to make a loose-coupler type of set.

"I had been handy with tools all my life, and had always derived a great deal of pleasure with a jack-knife. In fact, one of the first things I made after I lost my sight was a wooden chain which I had whittled out of a stick, and the keeper of the hotel where I was staying up in the Catskills liked it so much that he had it gilded and hung on the wall—not because of the beauty of the thing, perhaps, but because a blind man had made it. That called for visualizing a chain, and very careful carving in order to avoid spoiling the links. Then again some of the neighbors have brought in their clocks for me to fix, and other similar jobs, so all in all I have kept in pretty good trim. And with it I developed a sense of proportion and design, and as I set about the task of building my radio set I could see it being developed step by step—see it almost as well as a man with eyes.



"Dimensions of course were the principal thing. The secondary had to fit into the primary. I had to make calculations for the end boards, the stand it was to rest on, wire the coils, bolt on my condenser, the detector, insert my posts, connect to the aerial and so on. The set you see here is a loose-coupler type crystal set with a 43-plate condenser shunted across the secondary. It was the first set I built, but since then I have built three others—one for a girl across the street and two others for boys. I enjoy it immensely—there is nothing like being employed, no matter whether you are blind or not. It saves people from brooding and pitying themselves—self-pity is the worst affliction that can befall a man. What I have done, others can do, and they will be all the better for it, and if you publish this interview I hope it will reach the ears of blind folks so that they may learn of the advantages of radio.

"First, in the actual construction of my set, I started with the base board, visualizing where the coils ought to be, the condenser, the detector and where the lead-in and ground posts should be. I sawed this board from the solid end of a box, using a square to get the saw started straight, and applying it frequently to the board to learn if I was making a good job. Then for legs for the set I got hold of four base-board bumpers that folks sometime screw onto a door near the bottom to prevent the knob bruising the wall paper and plaster. Besides being about the right height—three inches or so

—they have rubber tips and come so nicely carved all ready to screw on that one wouldn't want anything better for legs. Then I sandpapered them and set about building my coils.

"That is where one of the things belonging to my wife came in—the much abused rolling pin. Besides proving wonderful kitchen nightsticks and pie-crust rollers, they are ideal for the winding of a coil—at least, it was so with me. My boy got a soap box for me and I cut out a small section on both sides, about two inches deep, to form sockets for the ends of the rolling pin to fit in. In a way, this acted as an improvised lathe. Then I ran the rolling pin through the cardboard cylinder on which was to be wound the coil. This proved a very good fit, and when the pin was set in the niches of the box I could turn it very steadily and evenly with one hand and guide the wire with the

other, and thus I wound my primary coil. The secondary of course was a little harder proposition because I had to jab holes through the cardboard with a hat pin every ten loops and lead the wire ends through, for taps to the switch points.

"The end board itself was a little difficult to make because I did not have an auger large enough to bore a $3\frac{1}{2}$ -inch hole. But my youngster had one of those model building sets with which you can build towers and bridges and things. In this set were several small pieces of steel with a number of perforated holes half an inch apart. Taking two pieces of steel, I set an old Gillette safety-razor blade between them and bolted the steel and blade together. Little axles and collars also come with a building set, so I screwed a collar to the board, saw that my safety-razor blade was $1\frac{3}{4}$ inches away, or half the diameter of the hole, and then swung it round and round like a compass knife, cutting deeper and deeper each time until finally I had cut all the way through the board. Right here, however, comes a joke on me—after I had spent the best part of a day making that $3\frac{1}{2}$ -inch hole, I found out I could have bought an end board with a hole already in it for five cents! But I had the fun of figuring out a device for making it, anyway.

"The next step was to mount the condenser. This called for holes to be drilled in order to bolt the blade part to the meter scale. Drilling holes straight was a little difficult, but I managed to do it with the aid of a cardboard pat-

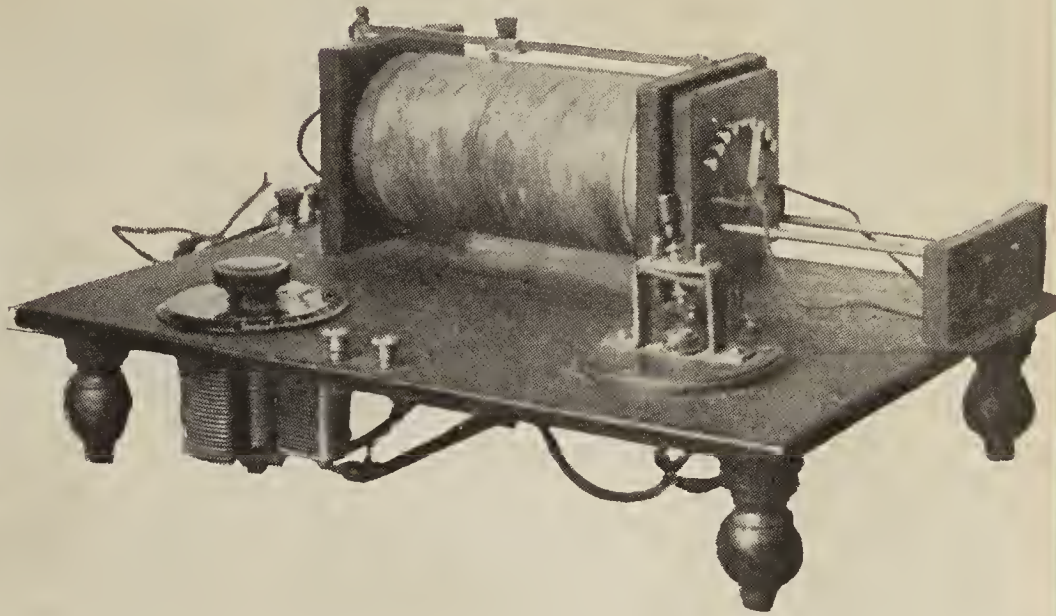
tern and a good deal of patience. The holes had to be straight in order to make the two parts jibe, and I certainly wanted the set to look as though a workman had constructed it, and if it looks the way I have visualized it, it must be O. K.

"Finding a sensitive spot on the crystal also proved a tedious proposition. Finally I got it with the aid of a buzzer, which also lets me know whether my tuner is in contact with the coil or not. Funny thing about these crystals. They seem very temperamental and shy. You never know where a sensitive spot might be, and after you get it you never know the reason why. I remember working practically the whole of one evening trying to find a sensitive spot on my crystal and was about to give it up and go to bed when a sudden little jar with my knee found the sensitive spot for me. I had the phones on my ears, and right away got the surprise of my life. I was tuned in at 360 meters and the first thing I heard was the name 'Patrick' coming over in code. Patrick is my name, but why it should be the first thing to come through or who sent it I do not know. Anyway, Patrick had found the sensitive spot on the crystal, and Patrick sat up until way long into the night listening to one of the best concerts he had ever heard."

Thereupon Mr. O'Keefe went on to tell of his experience with aerials. His first aerial was a wire that he ran out on the pulleys of the family clothes line. This proved rather weak. Then he tried running a wire around the house, and on the roof of the house, but it was dangerous for him to walk around an unguarded roof. Finally, he came to the use of a device which he screws into an electric light socket, the wiring circuit of the house acting as the aerial. This system has given excellent results, and inasmuch as he uses a condenser which is shunted across the secondary, and also a phone condenser, he is able to tune quite sharply. Altogether, his is one of the best arranged home-made crystal sets that the writer has ever seen, neatly constructed and yet as simple as can be.

"Painting was the only part of the work I didn't do myself," he said. "I wanted the set to look O. K., and while I could gather how it looked by the feel, I could not paint that way—that is, I didn't want to be putting my fingers on the painted surface to guide me in the work, so my boy painted it for me."

"What was the total cost of the set?" I asked.



THE CRYSTAL SET WHICH MR. O'KEEFE MADE BUT HAS NEVER SEEN

It is almost inconceivable that a man who is totally blind can build a complete radio set unassisted, including winding the coils, and doing all the wood working. The secondary was wound over a rolling-pin; the legs of the platform are door-stops. Mr. O'Keefe cut the $3\frac{1}{2}$ " hole in the loose-coupler end-piece with an improvised device employing a safety razor blade

"A little less than \$5.00," was the reply. "The condenser was the most expensive part of it, but it is worth all it cost as it helps me to tune out a station I don't happen to want. The phones are only a makeshift, but I make them do. The whole outfit gives very good satisfaction, and of course I get more than an ordinary amount of pleasure out of it on account of having made it myself."

The ex-policeman leaned back in his chair and puffed contentedly at a cigar. He was sitting in his "corner," or as his wife terms it, his "workshop." Directly overhead were his police department certificates. On one side of the chair, next to the mantel of the fireplace, stood a little table covered with tools, wire, and other odds and ends, and attached to this table was a swinging board supporting his present set. It is always within reach, and pretty nearly always in use. For wherever broadcasting is taking place in the metropolitan area here is one man quite willing to listen.

Next to his chair stood a little stool on which were several magazines for the blind, printed in

Braille, or the raised-dot system, various combinations of dots representing different letters in the alphabet. But I learned from Mr. O'Keefe that there is nothing in the literature for the blind pertaining to radio. He said this was most unfortunate, for of all people in the world who stand to benefit from radio the blind would probably head the list.

"I do not like to ask my wife and children to sit down and read to me," he explained. "The wife has her family work to do and the children have to prepare their school lessons, and it would be selfish on my part to take up much of their time. No, I enjoy sitting here a couple of hours at a time listening to what's going on in the world. No one knows the amount of good I get out of this little set, and no one can know but myself, for it is like an emotion—very hard to explain. I am a great lover of music, and certainly get the concerts very clear—that is, unless some fellow with a tube set allows it to oscillate and send out a flock of 'birdies.' But that doesn't happen very often, for I tune pretty sharply, and generally succeed in tuning them out. Music has a wonderful effect on me—simply lifts me right out of everything, and before radio came in I used to make a lot of it myself.

"The trips you can take via radio are certainly great. A short time ago the advertising manager of the American Express Company gave a series of travel talks on tours in foreign lands—and I went with him. I could visualize the foreign peoples he described, their ways of living, and every bit of the wonderful scenery. The Company never knew how much I enjoyed that trip! I have gone completely around the world, and it didn't cost me a cent. And then I went down to the dock on the East River and talked with an old salt who has been in every port in the world, one of those fellows who can describe things beautifully, and he went more into detail about the different places. But wasn't he surprised when I began to tell him all about Australia? He wondered how the deuce I knew!

"But the best sport of all comes from people who don't know they are broadcasting. For instance, at some of these banquets, the speeches are picked up by microphone and re-

layed to a station to be broadcasted. Now the average man doesn't know how sensitive a microphone is, and unwittingly two or three fellows sitting near the microphone will discuss the ladies and drop whispers to one another in a confidential tone. And away, perhaps for thousands of miles, those little confidences will be wafted by the radio waves to fall on listening ears.

"At one of these formal gatherings the toastmaster announced that Charles M. Schwab would speak. Mr. Schwab gave a very fine address, and during the course of it he commenced to laugh. That laugh tickled me, and I remembered it. One evening I heard the same laugh again, and I said to my wife, 'My friend Charlie Schwab is here,' and sure enough he was afterward introduced to speak. He had evidently been sitting near the microphone, unaware that people with phones over their ears were enjoying the merrymaking too.

"The world's series, the big football games, the horse races—all the sports come to me through the air. Last summer, a friend of mine dropped in and I began telling him all about the ball game. 'How did you hear about it?' he asked. He had been to the game that very afternoon himself, and had got soaking wet in the rain, whereas I sat here perfectly contented and heard Grantland Rice say 'Now the pitcher is winding up, and now he lets it go.' And I didn't get wet, either.

"Of course, my machine is limited to a radius of about 25 miles—the more powerful sets bring in the far-away station, but I get as much as I want at that. Next summer a friend and I are going fishing along the North Shore, and I am certainly going to take my little set along and rig up an aerial on the boat.

Yes, indeed, radio is a wonderful boon to humanity, and I look forward to still greater things. Somehow I think that an artificial sense of sight could be stimulated in people who have lost the sight of their eyes. I haven't any worth-while suggestions to offer, but perhaps someone who knows more about radio than I do will discover a method. In the meantime, let the blind be thankful that radio is at hand—and, also, let them use it."



HV1792

C.I

O

Caddell, Alfred M.

A man who built a set he has never seen.

Date Due			

Bno-Dart

INDUSTRIES

Newark 14, N.J. • Los Angeles 25, Calif.
Toronto 2B, Ontario Made in U. S. A.

